**Abstract**

**Title:**

Electromyographic analysis of the influence of vibrating dumbbell on upper extremity muscles

**Objective:**

The main purpose of this study was to compare the electric activity of m. biceps and triceps brachii, and upper and lower part of m. trapezius, during exercises both with a vibrating dumbbell, and a dumbbell without vibrations. Furthermore, our objective was to compare the muscle activity during static stress (dumbbell kept in one position), and dynamic stress with the vibrating dumbbell (moving in the elbow joint).

**Methods:**

Surface electromyography was chosen as an objectification method. Nine healthy women of age between 23 and 26 years participated in this study. A dumbbell of 1, 5 kg weight, 36 Hz vibrating frequency and 1,3 mm amplitude was used.

**Results:**

An increase of electrical activity can be observed in all assessed muscles when stimulated with vibrations. However, this increase can be considered as statistically significant only in case of static stress of the m. biceps and triceps brachii. Results also indicate high activity of the upper part of m. trapezius during exercise with activated vibrations.

**Key words:** *vibrations, vibrating dumbbell, vibration training, electromyographic analysis*